

BSc/MSc-project

Title:

Image analysis of two-photon microscopy bladder cancer biopsies

Description:

In collaboration with Gentofte Hospital, we record, analyze and segment two-photon microscopy images of bladder histologies from bladder cancer patients of the urology department. The aim is to develop a routine to assess the cellular to nuclear ratio of cells from bladder biopsies. It has been shown that this ratio changes significantly upon carcinogenesis, and it is therefore a promising candidate as a biomarker for the grade of a tumor.

The project is part of a collaboration with the medical staff at the Gentofte Hospital, where biopsies were obtained. These biopsies were imaged on our two-photon microscope, and now a software workflow has to be established, using Matlab or ImageJ or similar, for the analysis of these images.

Required qualifications:

The use of scientific software, such as Matlab and/or ImageJ, is an integral part of this project, and the student must be at ease with fundamental skills in programming. A basic understanding of microscopy in general and of two-photon microscopy in particular as well as image processing and analysis is an asset, and will be further developed during the project.

Responsible institution: DTU Fotonik

Contact information: Dominik Marti (domar@fotonik.dtu.dk)

Allowed no of students per report: 1

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